

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC055NM

Site Name: Sandy

Precipitation or Climate Zone: 14 to 18 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to undulating landscapes on upland plains. Slopes may range from 0 to 5 percent, but are usually less than 3 percent. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,300 feet above sea level.

Land Form:

1. Plain

2.

3.

Aspect:

1. N/A

2.

3.

	Minimum	Maximum
Elevation (feet)	3,550	4,300
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is “semi-arid continental”.

The average annual precipitation ranges from 14 to 18 inches. Variations of 5 inches, more or less, are common. Approximately 85 percent of the precipitation falls from April through October. Most of the summer precipitation falls in the form of high intensity-short duration thunderstorms, often accompanied by hailstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is 58 to 61 degrees F with extremes of 30 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 210 days. The last killing frost being in early to mid-April and the first killing frost being in late October to early November.

Temperature and rainfall both favor warm-season perennial plant growth. Occasionally an early spring or late fall storm will occur from a prolonged front. This, along with occasional spring and fall showers, allows the cool-season component to occupy an important part of this plant community. The vegetation on this site can take advantage of the moisture at the time it falls. Because of the soil profile, little moisture can be stored for any length of time. Strong winds blow from February through May from the south, which rapidly dries out the soil during a period critical to cool-season plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	181	216
Freeze-free period (days):	203	238
Mean annual precipitation (inches):	14	18

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.37	0.45	22.0	56.6
February	0.35	0.49	25.8	62.0
March	0.44	0.68	31.5	69.0
April	0.62	1.05	39.6	77.0
May	1.67	2.10	49.4	85.5
June	1.89	2.63	58.4	92.8
July	2.15	2.75	62.1	93.6
August	2.41	2.95	60.7	91.9
September	1.88	2.63	53.9	85.9
October	1.31	1.73	42.6	77.1
November	0.51	0.57	30.5	65.3
December	0.42	0.60	23.1	58.1

Climate Stations:

				Period
291939	Location	Clovis, New Mexico	From: 11/24/10	To: 12/31/01
292207	Location	Crossroads #2, New Mexico	From: 07/01/29	To: 05/31/01
292854	Location	Elida, New Mexico	From: 05/01/14	To: 12/31/01
294026	Location	Hobbs, New Mexico	From: 01/01/14	To: 12/31/01
295617	Location	Melrose, New Mexico	From: 04/01/14	To: 12/31/01
297008	Location	Portales, New Mexico	From: 01/01/14	To: 12/31/01
298713	Location	Tatum, New Mexico	From: 06/01/19	To: 12/31/01

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These are well drained, moderately deep to shallow soils over calcic or petrocalcic layers. The surface textures are typically fine sandy loam. The textures of the subsurface layers are fine sandy loam, sandy clay loam and clay loam. Depth to the calcic layers ranges from 20 inches to 50 inches. Depth to the petrocalcic layers ranges from 20 to 40 inches. Permeability is moderate to moderately rapid above the calcic and petrocalcic layers. The available water-holding capacity is moderate to high. The effective rooting depth is typically 20 to 50 inches. The porous sandy surface soils conduct moisture readily to the subsurface layers for storage and then act as mulch, retarding evaporation. Early precipitation, falling before the growing season can be stored in the subsoil for early green-up of plants as soon as air temperatures permit, without having to wait for growing season precipitation. Without protection by plant cover and organic residue these surface soils become wind blown and easily eroded, thereby exposing the subsoils to water erosion.

Parent Material Kind: Eolian Sands

Parent Material Origin: Sandstone-unspecified

Surface Texture:

- | |
|--------------------|
| 1. Fine sandy loam |
| 2. Loamy fine sand |
| 3. Sandy clay loam |

Surface Texture Modifier:

- | |
|--------|
| 1. N/A |
| 2. |
| 3. |

Subsurface Texture Group: Loamy

Surface Fragments ≤ 3 " (% Cover): N/A

Surface Fragments > 3 " (% Cover): N/A

Subsurface Fragments ≤ 3 " (% Volume): 15 to 35

Subsurface Fragments ≥ 3 " (% Volume): N/A

	Minimum	Maximum
	Well	Well
Drainage Class:	Very slow	Moderately rapid
Permeability Class:	20	>72
Depth (inches):	0.00	2.00
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	6.6	8.4
Soil Reaction (1:1 Water):	N/A	N/A
Soil Reaction (0.1M CaCl₂):	6	12
Available Water Capacity (inches):	N/A	N/A
Calcium Carbonate Equivalent (percent):		

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

The potential natural plant community of this site has the aspect of a mixed short and mid-grass prairie. Grasses such as the gramas, little bluestem, dropseeds and plains bristlegrass with lesser amounts of forbs and shrubs evenly distributed dominate it. The perennial grass and perennial forb components remain fairly constant in relation to each other, with the total production of both increasing or decreasing in a parallel manner during wet or dry years and cycles. The woody component is relatively constant excluding fire or man induced disturbances. Response to dynamic climatic flux is exhibited by the annual grass and annual forb components, which fluctuate somewhat from year to year with annual and seasonal variation in amount and distribution of rainfall.

Canopy Cover:

Trees	0
Shrubs and half shrubs	1 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	35 – 45
Bare ground	15 – 25
Surface gravel	0 – 2
Surface cobble and stone	0
Litter (percent)	30 – 40
Litter (average depth in cm.)	1 – 3

Plant Community Annual Production (by plant type): _____

<u>Annual Production (lbs/ac)</u>			
Plant Type	Low	RV	High
Grass/Grasslike	640	920	1,200
Forb	104	150	195
Tree/Shrub/Vine	64	92	120
Lichen			
Moss			
Microbiotic Crusts			
Total	800	1,150	1,500

Plant Community Composition and Group Annual Production:**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOCU	Sideoats Grama	173 – 230	173 – 230
2	SCSC BOSA	Little Bluestem Silver Bluestem	58 – 115	58 – 115
3	SEVU2 PASE5	Plains Bristlegrass Sand Paspalum	35 – 58	35 – 58
4	HENE5	New Mexico Feathergrass	12 – 35	12 – 35
5	BOGR2 BOHI2	Blue Grama Hairy Grama	115 – 230	115 – 230
6	BOER4	Black Grama	115 – 173	115 – 173
7	SPCR	Sand Dropseed	35 – 58	35 – 58
8	ARIST	Threeawn spp.	23 – 58	23 – 58
9	MUAR2	Sand Muhly	23 – 58	23 – 58
10	2GA	Other Annual Grasses	23 – 58	23 – 58

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	SPHAE RACO3 VEPO4 HOGL2 PSLA3	Globemallow Prairie Coneflower Verbena Indian Rushpea Lemon Scurfpea	35 – 58	35 – 58
12	PSCO2 AMPS	Paperflower Western Ragweed	35 – 58	35 – 58
13	HEAN3	Annual Sunflower	35 – 58	35 – 58
14	2FORB	Other Forbs	35 – 58	35 – 58

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	YUGL	Small Soapweed Yucca	35 – 58	35 – 58
16	OPPO	Plains Pricklypear Cactus	12 – 23	12 – 23
17	GUSA2	Broom Snakeweed	12 – 23	12 – 23
18	2SD	Other Shrubs	12 – 23	12 – 23

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: buffalograss, fall witchgrass, red lovegrass, tumble windmillgrass, tumble lovegrass, field sandbur, mesa dropseed, spike dropseed, Arizona cottontop, Hall's panicum and sixweeks grama.

Other shrubs that could appear on this site include: winterfat, ephedra spp., pale wolfberry, feather dalea, southwest rabbitbrush, shinnery oak, sand sagebrush and mesquite.

Other forbs that could appear on this site include: dotted gayfeather, Indian blanket, prairie clover, penstemon, fleabane, prickly poppy, buffalobur, woolly dales and woolly gaura.

Plant Growth Curves

Growth Curve ID 5505NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed short and mid-grass prairie with minor components of forbs and shrubs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, badger, swift fox, desert cottontail, spotted ground squirrel, plains pocket gopher, hispid pocket mouse, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, ferruginous hawk, roadrunner, lesser prairie chicken, scaled quail, horned lark, meadowlark, plains spadefoot toad, western box turtle, lesser earless lizard, southern prairie lizard, round-tailed horned lizard, bullsnake, plains black-headed snake and western diamondback rattlesnake.

Where large woody plants are present, scissor-tailed fly catcher, mourning dove, white-necked raven, mockingbird, loggerhead shrike, roadrunner and ferruginous and Swainson's hawk nest. Where associated with farmland, lesser sandhill crane and long-billed curlew feed during migration. Vesper sparrow utilizes the site during fall migration. The marsh hawk hunts over the site during the cooler months.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	Hydrologic Group
Amarillo	B
Amarose	B
Arvana	C
Brownfield	B
Clovis	B
Douro	B
Faskin	B
Mansker	B
Portales	B
Zita	B

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation, photography, quail and dove hunting, antelope hunting and predator hunting. During years with abundant spring moisture and continuing moisture throughout the growing season, this site displays a colorful array of wildflowers from May through September.

Wood Products:

The natural potential plant community of this site affords little or no wood products of value.

Other Products:**Grazing:**

This site provides forage suitable for grazing during all seasons of the year. The site in itself lacks protective cover for livestock from winter storms. It is suitable for grazing by all classes of cattle, as well as minor proportion of sheep and goats. Because of the high percentage component of grasses, the site is best suited to animals such as cattle, which utilize grasses for a large percent of their diets. In general, cattle grazing will result in a decrease in grasses and palatable forbs and an increase in woody plants. Sheep grazing will result in a decrease in perennial forbs and an increase in unpalatable grasses and woody plants. Grazing by goats results in a decrease in browse and an increase in grasses. Continuous, yearlong grazing or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of sideoats grama, little bluestem, plains bristlegrass, winterfat and Mormon-tea with a corresponding increase in yucca, plains pricklypear cactus, field sandbur, ragweed, threeawn spp., and broom snakeweed. Eventually, mesquite and woolly groundsel will invade the site and together with broom snakeweed will severely impair the grazing value of the site. Well planned systems of deferred grazing by domestic livestock which vary the seasons of grazing and rest in pastures during successive years will result in a balanced plant community providing high-quality forage and browse during all seasons of the year.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month****Similarity Index****Ac/AUM**

100 - 76	2.0 – 2.8
75 – 51	2.7 – 4.1
50 – 26	4.5 – 6.5
25 – 0	6.5+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	P	P	P	P	P	P	D	D	D
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	P	P	P	P	P	P	D	D	D
Sand Paspalum	<i>Paspalum setaceum</i>	EP	D	D	D	P	P	P	P	P	P	D	D	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	D	P	P	P	D	D	D	D	D	D
Blue Grama	<i>Bouteloua gracilis</i>	EP	D	D	D	P	P	P	P	P	P	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	<i>Verbena polystachya</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U
Indian Rushpea	<i>Hoffmannseggia glauca</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	U	D	D	D	U	U	U

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Upright Prairie Coneflower	Ratibida columnifera	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	Verbena polystachya	EP	U	U	U	D	D	D	D	D	D	U	U	U
Indian Rushpea	Hoffmannseggia glauca	EP	U	U	U	D	D	D	D	D	D	U	U	U
Lemon Scurfpea	Psoraleidum lanceolatum	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	U	D	D	D	U	U	U
Other Annual Forbs	Various	EP	U	U	U	D	D	D	D	D	D	U	U	U
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Sand Paspalum	Paspalum setaceum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	P	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	P	P	P	P	P	P	D	D	D

Animal Kind: Livestock

Animal Type: Goat

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Other Shrubs	Various	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Upright Prairie Coneflower	Ratibida columnifera	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	Verbena polystachya	EP	U	U	U	D	D	D	D	D	D	U	U	U
Indian Rushpea	Hoffmannseggia glauca	EP	U	U	U	D	D	D	D	D	D	U	U	U
Paperflower	Psilostrophe cooperi	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	U	D	D	D	U	U	U
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	U	D	D	D	U	U	D	D	D	U
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Sand Paspalum	Paspalum setaceum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Broom Snakeweed	Gutierrezia sarothrae	L/S	D	D	D	D	D	D	D	D	D	D	D	D

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: De Baca, Chaves, Curry, Lea, Roosevelt

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Lea, Roosevelt & Curry.

Characteristic Soils Are:

Amarillo, Amarose, Arvana, Brownfield Clovis, Douro, Faskin, Mansker, Portales, Zita

Other Soils included are:

Site Description Approval:

{PRIVATE} Author

Date

Approval

Date

Don Sylvester

06/05/80

Don Sylvester

06/05/80

Site Description Revision:

{PRIVATE} Author

Date

Approval

Date

Elizabeth Wright

02/05/03

George Chavez

2/24/03